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GB 1249889  
GB 1232096  
GB 1189809  
GB 1162572  
GB 323537  
GB 229677  
GB 243937  
US 3854747A  
US 3838868A  
US 3913933A  
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(54) Chassis for trailer caravan

(57) In a chassis having longitudinal side members, (1,2,) with a transverse member (6, 6a) at each end, each transverse member has a pair of arms (7, 8) which extend parallel to the respective longitudinal members and the arms are slidable longitudinally relative to the longitudinal members to vary the length of the chassis. The arms can be bolted to the longitudinal members in various selected positions. The transverse members have extensions (13), and stays 12 are fixed to these extensions and adjustably secured to the longitudinal members.

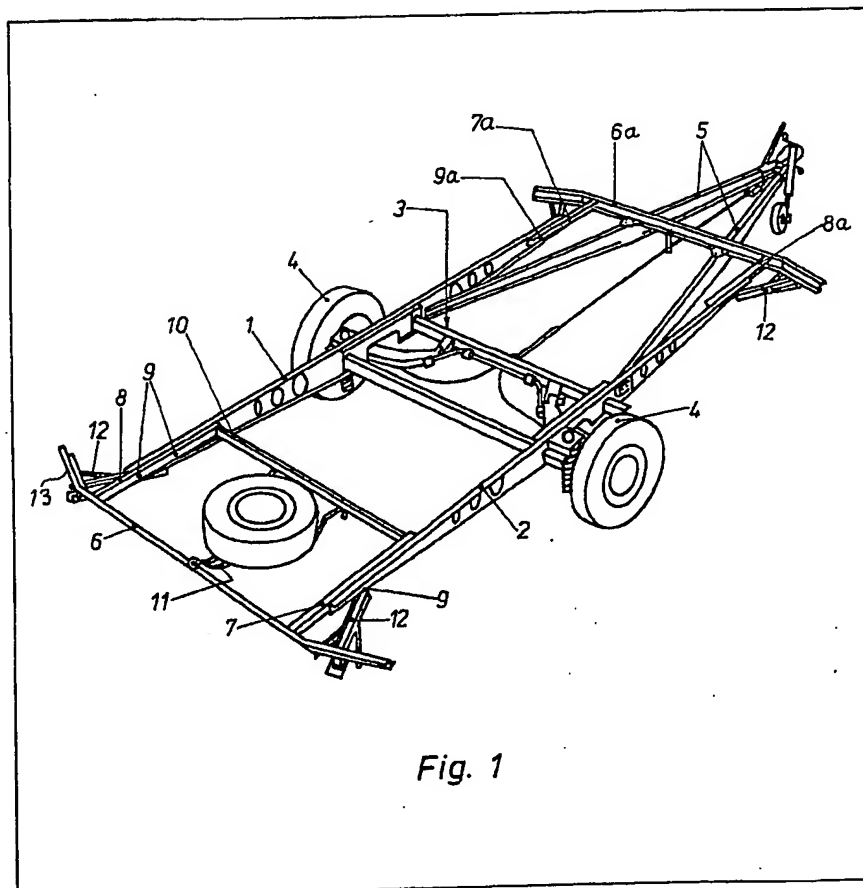


Fig. 1

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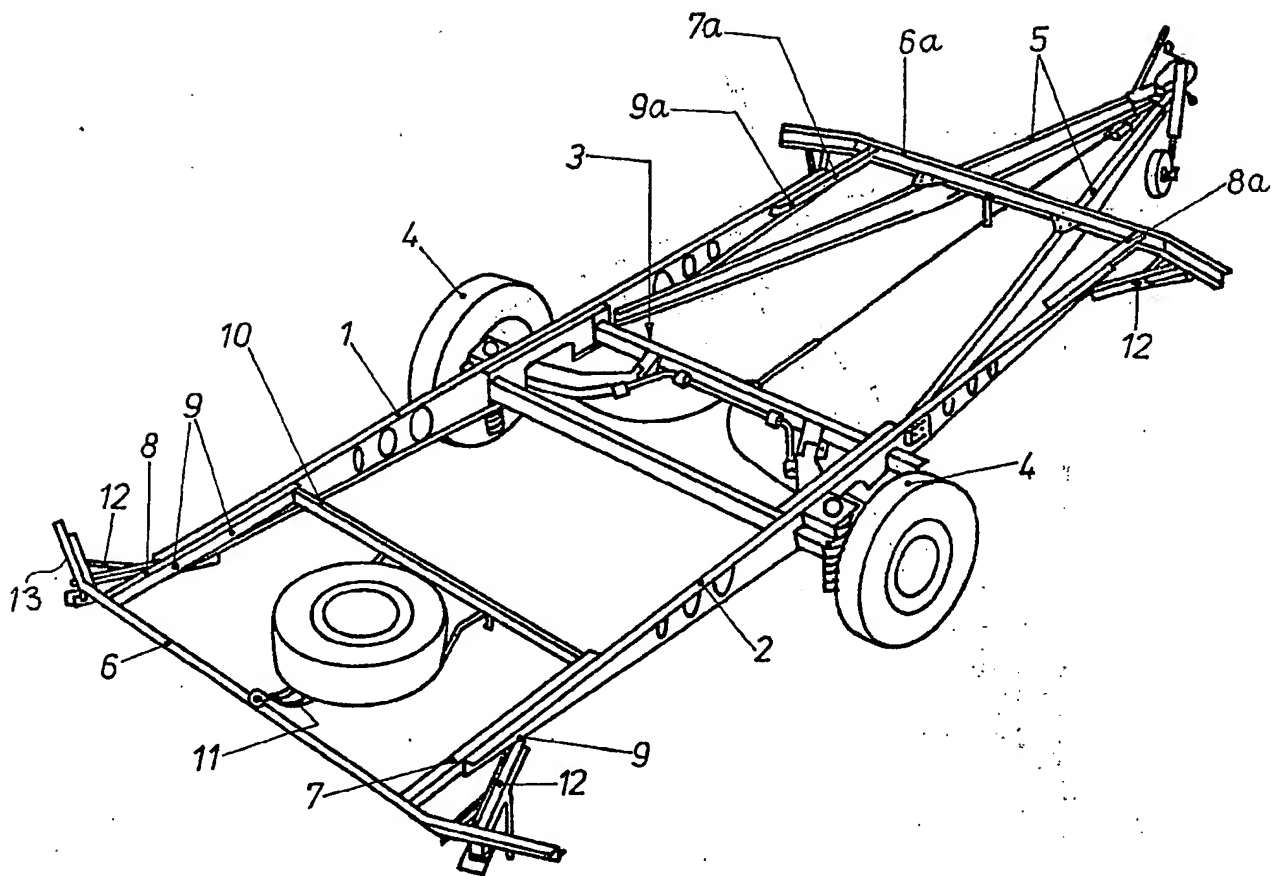


Fig. 1

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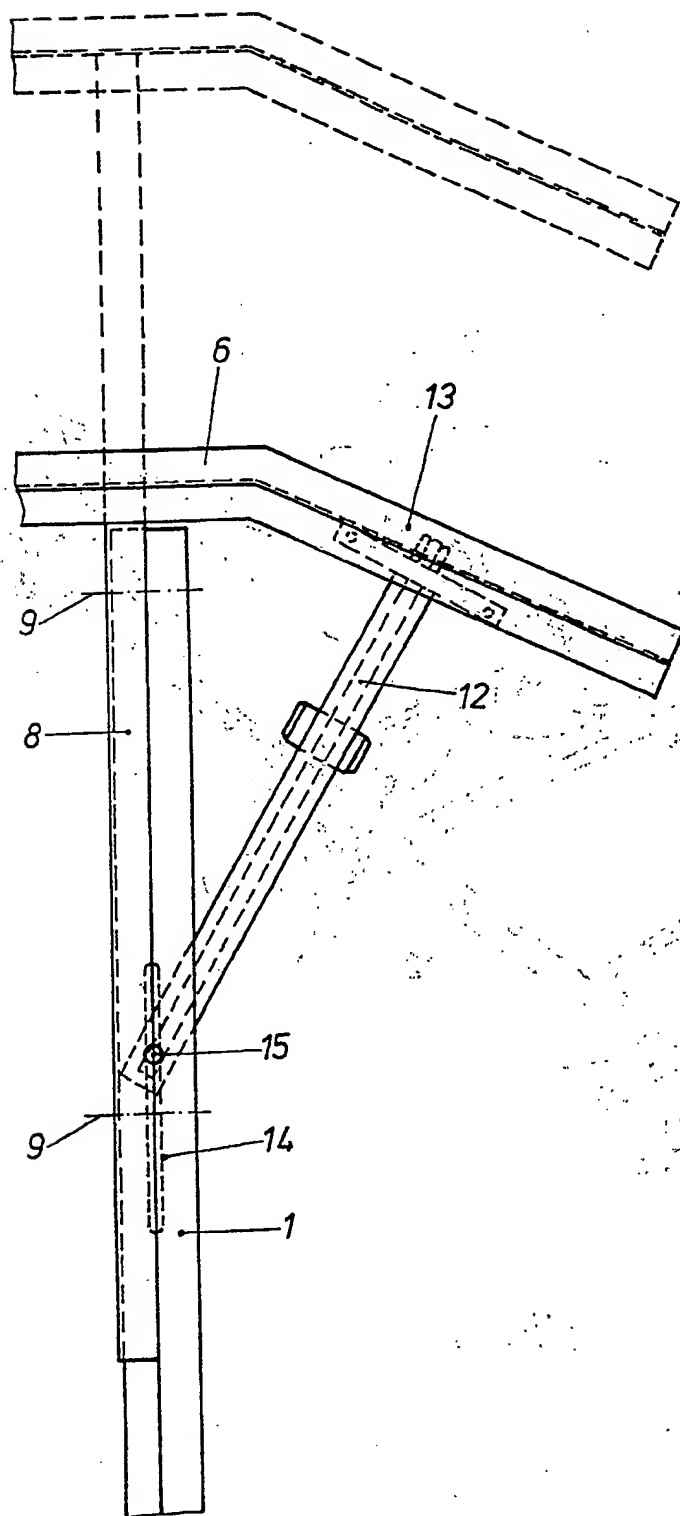


Fig. 2

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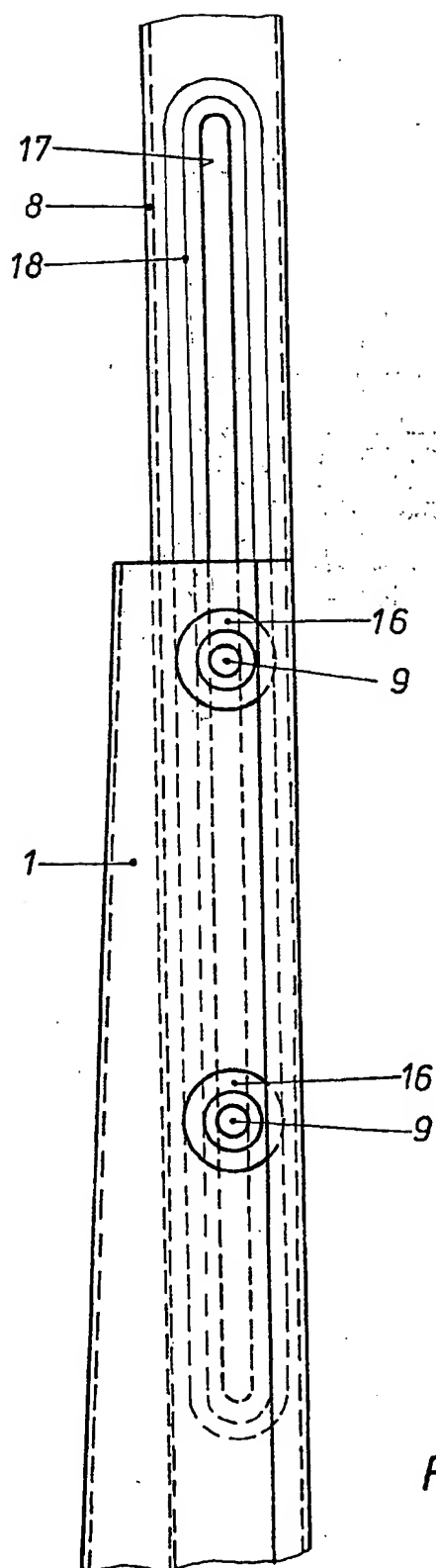


Fig. 3

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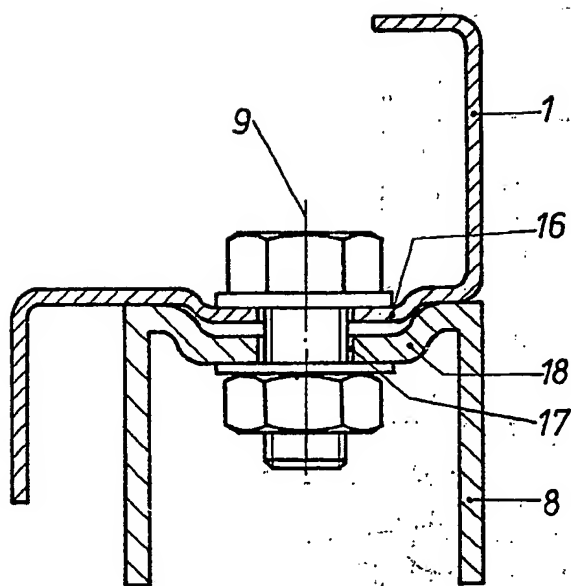


Fig. 4

## SPECIFICATION

## Chassis for trailer caravan.

- 5 The invention relates to a chassis for a trailer caravan.

In a known chassis for a trailer caravan, two spaced longitudinal members are connected together via an axle structure, which may consist of tubular axle parts obliquely positioned with respect to the longitudinal members. In the front and rear end zones of the longitudinal members, there is in each case a transverse member which is provided with an arm extending at a right angle thereto, i.e. in the direction of the longitudinal members. The free ends of the arms and the free ends of the longitudinal members are connected via a bolted connection, the bolted connection comprising bores and in each case a bolt with a nut. This demountability of the chassis is desirable first and foremost for transport reasons. This known chassis has a definite length which is not variable.

The invention provides a chassis for a trailer caravan which chassis is variable in length.

- 25 According to the invention, there is provided a chassis for a trailer caravan comprising longitudinal side members connected at least in one end zone by a transverse member, which is adjustable longitudinally of the chassis relative to the longitudinal members, the transverse member being provided with two arms each of which is bolted to a respective one of the longitudinal members by a connection which is releasable to permit fixing of the transverse member in any one of a plurality of adjustable positions relative to the longitudinal member.

Hence the chassis can be used with different lengths of superstructure, so that a single design of chassis can be used for a whole range of caravans. This simplifies large production, transport and stocking of spare parts.

The adjustability of the transverse member relative to the longitudinal members may be infinite between limits by means of elongate slots provided in the arms or the longitudinal members. It is however also possible for this adjustability to be stepped, corresponding to the desired graduations in the lengths of the caravan superstructures. Generally, however, an infinitely variable adjustment will be recommended because, when it becomes necessary to adapt the chassis to a particular and specific length of superstructure, it is simple to slacken the bolt connections, which do not have to be completely unfastened and taken apart. In a preferred embodiment, the arms have the elongate slots.

55 The arms can be connected to one another by an additional cross-member so creating a reinforced structure which imparts considerable stability to the chassis. A similar arrangement may be provided additionally at the opposite end of the chassis.

60 The profile cross-sections of the longitudinal members and of the arms are complementary to one another and together form a sliding guide, i.e. the sections support one another during movement and also provide for dynamic bracing of the parts on one another once the bolted connection has been tight-

ened. The arms can be provided to bear against the inside faces of the longitudinal members. This is advantageous, especially if an additional cross-member is provided. The longitudinal members, the arms and the transverse member or members, when viewed upwardly, preferably end in a common plane which forms a surface for mounting of the bottom of the superstructure.

The longitudinal members may have guide bosses through each of which a bolt is passed, the arms each carrying a corresponding elongate depression, in which the corresponding elongate slot is provided.

Cranked stays are disposed on the transverse member and secured to end portions thereof, which extend outwardly of the longitudinal members. The stays are secured at their opposite ends to the arms or are adjustably secured to the longitudinal members so that the bracing is retained whatever the adjusted position of the transverse member.

Between the transverse member and the cross-member it is possible to mount a spare wheel support which then, upon adaptation to different lengths of superstructure, is adjusted together with the transverse member, so that the spare wheel is readily accessible when required.

Reference is made to the accompanying drawings, in which:

Figure 1 is a perspective view of a chassis according to the invention;  
Figure 2 is a plan view of a corner of the chassis;  
Figure 3 is a view of the corner of the chassis, and  
Figure 4 is a section taken on the line IV-IV in Figure 3.

100 The chassis shown in Figure 1 has two longitudinal members 1 and 2 which are disposed on the right and left sides of the chassis respectively and which extend in the longitudinal direction of the chassis. The two longitudinal members 1, 2 are connected and secured together via an axle structure 3 which may be constructed in conventional manner. Suspended from the axle structure 3 are wheels 4. The chassis has a draw bar 5, the construction of which is not of relevance to the invention.

110 Provided in the front end zone of the longitudinal members 1, 2 is a transverse member 6a provided with two arms 7a, 8a. The arms 7a, 8a are preferably bolted and/or welded to the transverse member 6a. The arms 7a, 8a extend in the longitudinal direction of the chassis, parallel to the longitudinal members 1, 2. In the embodiment illustrated, the arms 7a, 8a are disposed between the longitudinal members 1, 2, so as to bear against the inside faces of the longitudinal members 1, 2, respectively. The transverse member 6a is adjustable longitudinally of the chassis in relation to the longitudinal members 1, 2, so that the chassis can be adapted to different lengths. For this purpose, the cross-sections of the arms 7a, 8a and of the longitudinal members 1, 2 are adapted to match one another, and bolted connections 9a are provided for fixing the arms to the members in any selected one of a plurality of relative positions.

Also at the rear end of the chassis, and of the longitudinal members 1, 2, there is a further trans-

verse member 6, which is similar in construction to the transverse member at the front of the longitudinal members, and likewise has arms 7, 8. At this rear end of the chassis, the free ends of the arms 7, 8 are mutually interconnected by a cross-member 10 which serves as a brace. Here, too, bolted connections 9 are provided for fixing of the transverse member 6 in the various positions relative to the longitudinal members 1, 2. Disposed between the transverse member 6 and the cross-member 10 is a spare-wheel holder 11 which also alters its position together with the corresponding transverse member 6.

Figure 2 shows the rear end of the longitudinal member 1 and the construction of the corner of a chassis in detail. The transverse member 6 and its arm 8 are connected via the bolted connection 9 to the longitudinal member 1. Broken lines show the transverse member 6 in a more extended position. Disposed on the transverse member 6 is a cranked stay 12. Such stays are provided at all four corners in analogous dispositions. For articulation of the cranked stay 12 on the transverse member 6, the adjacent end portion 13 of the transverse member 6 is inclined forwardly of the chassis at an acute angle to the longitudinal member 1. The cranked stay 12 is guided in an elongate slot 14 in the longitudinal member 1, and extending longitudinally thereof, and can be locked, in whatever position is desired, by means of a screw 15. It is however possible for the cranked stay 12 to be fixed on the arm 8, instead of guided on the member 1, so that in this case a displaceable construction is not needed.

Figures 3 and 4 show more clearly the construction and profile of the longitudinal member 1 and of the arm 8 or the transverse member 6. Stamped into the longitudinal member 1 around the bolted connections 9 are guide bosses 16. The bolted connections have bores here so that the bolts are always provided in the same place in relation to the longitudinal member 1. The arm 8, on the transverse member 6, has an elongated slot 17 to provide for infinite adjustability within limits. The elongated slot 17 is located in an elongate depression 18 which is complementary to the profile of the guide bosses 16 and receives the latter in supporting and guiding relationship, as seen from Figure 4. It goes without saying that the construction may also be reversed. As Figure 4 in particular shows, the bolt requires only to be slackened for the chassis to be varied in length. The transverse members 6, 6a with their arms 7, 8 and 7a, 8a can then be pulled out to desired relative positions. Then, the bolted connections 9, 9a are tightened. The profiles of the arms 7, 8 and 7a and 8a and of the longitudinal members 1, 2 are braced against one another over a large area in any relative disposition, i.e. over the distance between the two bolted connections 9 on each arm and beyond. Thus, a very secure connection is achieved. As Figure 4 shows, the profiles of the longitudinal members 1 and of the arm 8 end in a common plane which provides a plane surface for supporting a superstructure.

## CLAIMS

1. A chassis for a trailer caravan comprising longitudinal side members connected at least in one end zone by a transverse member, which is adjustable longitudinally of the chassis relative to the longitudinal members, the transverse member being provided with two arms each of which is bolted to a respective one of the longitudinal members by a connection which is releasable to permit fixing of the transverse member in any one of a plurality of adjustable positions relative to the longitudinal member.

2. A chassis according to Claim 1, wherein the adjustability of the transverse member relative to the longitudinal members is infinite between limits by the provision of elongate slots in the arms or the longitudinal members for receiving the bolts.

3. A chassis according to Claim 2, wherein the arms are provided with the elongate slots.

4. A chassis according to Claim 1, 2 or 3 wherein the arms are connected to each other by an additional cross-member.

5. A chassis according to Claim 4, wherein a spare wheel holder is mounted between the transverse member and the cross-member.

6. A chassis according to any preceding Claim, wherein the profile cross-sections of the longitudinal members and of the arms are complementary to one another guiding the arms on the longitudinal members during relative adjustment.

7. A chassis according to Claim 6, wherein the arms bear against inside faces of the longitudinal members.

8. A chassis according to Claim 6 or 7, wherein the longitudinal members have bosses, through each of which a bolt passes, and the arms have elongate depressions which guide the bosses, each elongate slot being provided in a corresponding one of the depressions.

9. A chassis according to any preceding Claim wherein stays are disposed on the transverse members outwardly of the longitudinal members and joined to the latter.

10. A chassis according to Claim 9, wherein each stay is adjustably secured directly to the adjacent longitudinal member.

11. A chassis according to Claim 9, wherein each stay is secured directly to the adjacent arm, the arm providing the connection between the stay and the adjacent longitudinal member.

12. A chassis for a trailer caravan constructed substantially as herein described with reference to the accompanying drawings.

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